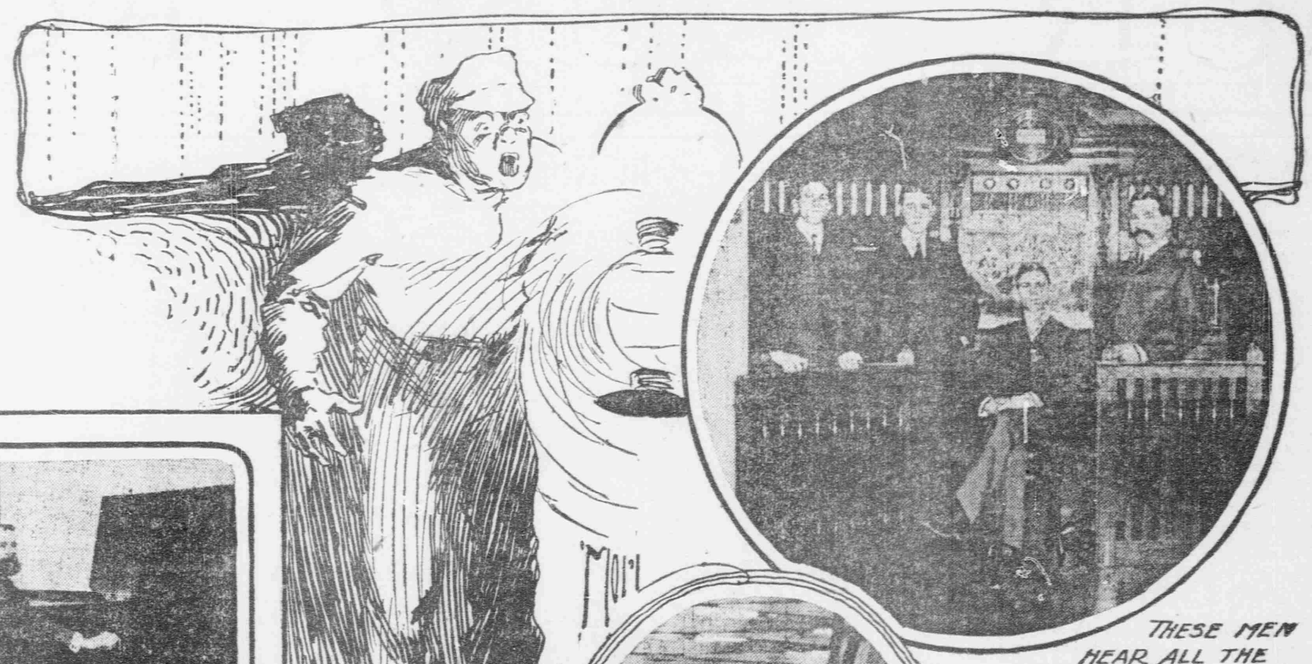
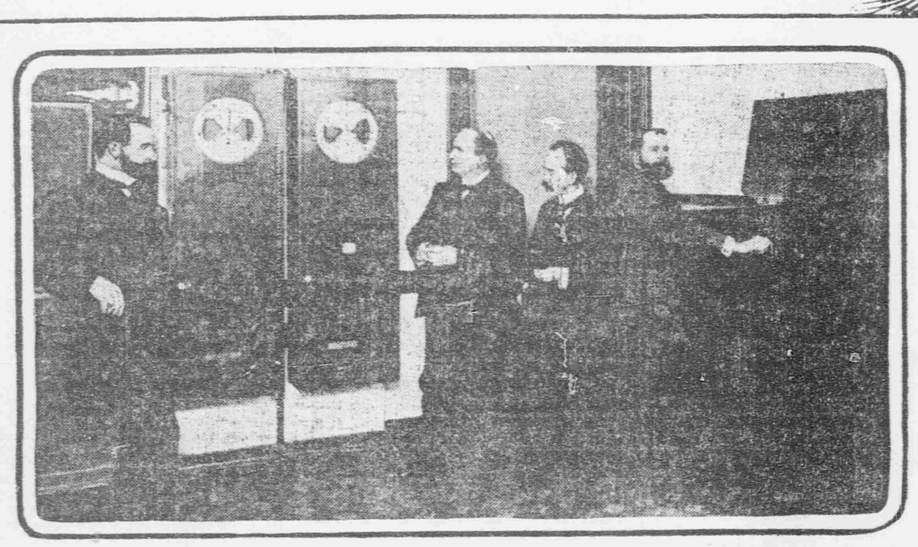
MEN WHO DARE NOT MAKE MISTAKES IN THEIR WORK

Upon the Absolute Accuracy of Many Persons in the Performance of Their Daily Work Depends the Lives and Safety of the Thousands of Travelers Who Are Sped Over Land and Sea in Comfortable Trains or Ships



THESE MEN HEAR ALL THE FIRE ALARMS



AT THE NAVAL OBSERVATORY SENDING OUT THE SIGNAL FOR DROPPING TIME BALLS ALL OVER THE LAND

IT was Napoleon who characterized a blunder as worse than a crime. To many men the mere fact that a shortcoming was accidental, a mistake, and not an intentional act, serves in the light of an all-sufficient excuse. Yet there are throughout the entire country men who dare not blunder—who dare not make mistakes. Oftentimes hundreds of human lives are dependent on their foresight and attention to duty. A single error, a slight miscalculation, a few moments of drowsiness, any one of these things would prove fatal. Others there are who hold positions that, while lives would not be sacrificed should a slip occur, would yet cause much trouble by an error—a trouble the consequences of which they must abide by themselves.

And, as is too often the case, the men who take the greatest risks are those who are paid the least. Long hours, too, are required of them, and yet their work must be absolutely perfect.

The Fire-Alarm Operator.

In a big city like Washington one of the ever-present menaces is fire. The red lights at street corners, indicating the location of a fire-alarm box, are like watchful eyes in the gloom of the night, keeping guard while the people sleep. Yet, without the added vigilance of the operative at the headquarters station of the system, one might ring fire in vain.

When an alarm is sounded, one of a dozen little red lamps at the main office flashes up. It is at the bottom of a tube, on which, in heavy black figures, appear the numbers of the boxes on that circuit. The number of the box is sounded, and, moreover, an automatic machine registers the alarm in dashes, separated by blank spaces. Up to this time there has been no sound sent out to any engine house. Now the operator throws over a little lever. A repeater takes up the circuit, and the box at which the alarm was first pulled repeats it to every engine and truck station in the city. But this is not all. In order that there shall be no mistake, the number is now arranged on another machine; that is, presuming the alarm is 267, the three dials are turned around until the figures 267 are visible—and then "tapped out" on the large gongs in the different fire houses.

The process is as automatic as it is possible for human ingenuity, to make it, yet there is ample room for the exercise of care and judgment, and where this room exists, there is always room for mistakes as well. A box might be out of order and not ring properly. The operator must know whether the number being sounded is on that circuit before it is repeated. And although only one alarm can be repeated at a time, in the case of simultaneous calls, the others being held back to prevent confusion, it happens that there is uncertainty at the engine house as to the number rung.

Here again the responsibility rests upon human shoulders. A telephone operator sits at a switchboard of a private system ready to repeat the call verbally wherever any doubt should arise. He, too, dare not make a mistake, for in this matter a slight error would prove a grievous one.

The Railroad Operator.

It was a night railroad operator near Washington who wrote the following:

In his little lamp-lit office
Through the gloomy hours of night
Sits the sleepless operator
From "one" till morning's light,

Listening with sharpest hearing
What the ticking sounders say,
Talking with a wakeful neighbor
In the station far away,

Telling jokes and telling gossip
To drive dull night along,
While his duties and his orders
All the time his mem'ry throng.

Tho' his eyelids droop at midnight
Feign to close themselves in sleep
Not for him the bliss of slumber;
He must still his vigil keep.

All the while the sleepless sounder
Tells its tale of joy and woe;
Now it tells of birth or marriage,
And how hearts with rapture glow;

Now it tells of fatal sickness,
Now it speaks in wailing breath
While it tells, in mournful accents,
Of some dear friend's sudden death.

Little knows the man or woman
Swiftly speeding o'er the rail,
How the safety and the danger
Rest on one who dare not fail.

The Switchman.

Across the Long Bridge there pass the trains of five steam railways, and the trolley line to Mount Vernon and Alexandria. There are sixty-two regular passenger trains daily, and freights and "specials" bring the number up to nearly 200. Across the bridge itself these trains use a single track. The system is what is known as an absolute block, with a tower at each end. Here, night and day, in storm and shine, snow, hail or fog, sits an operator, whose duty it is not only to set signals showing whether the track is clear, but to open and close the switches, telegraph both ways whenever a train passes, and make a record on a tally sheet of the fact, but also to make a record of the time the train passed the lower tower and the one above him as well. Thus, each operator makes these entries for every train.

What a Mistake Would Mean.

The physical labor involved is heavy and the unerring attention to duty must be perfect. Each block must be kept closed against any incoming train until the one ahead has passed out, and the operator at the next station signaled clear. Carelessness in this respect would be likely, on a double track, to cause a rear-end collision, or a head-on crash on a single track. Any violation of this rule, therefore, is cause for instant dismissal, even though no harm results.

Busy as these railway operators must be, they are compelled to work twelve hours at a stretch, and for the attention and clearness of thought they are compelled to exercise they receive only $55 a month. And they dare not make mistakes. The towers near this city are especially busy. The one at Fourteenth Street, where the trolleys enter the main line, is presided over by L. A. Hamilton, who also controls the entrance to the switch yard. Beyond him, and controlling between them the single track block on the bridge are Mr. Arrison, on this side, and Mr. Simcox on the Virginia shore. The bulk of the toil comes on the day operators, for the night traffic is naturally lighter.

Midway on the Long Bridge is the man who operates the draw. It is his duty to signal, by five bells, each time the draw is opened, to the operators at either end. It is then their duty to set danger signals and close the block at each end. The drawbridge man must also set his own signals. Should he neglect this, or fail to inform the operators, it is easy to see what might happen, for weather would often prevent anyone on the shore end from seeing whether or not the draw was open.

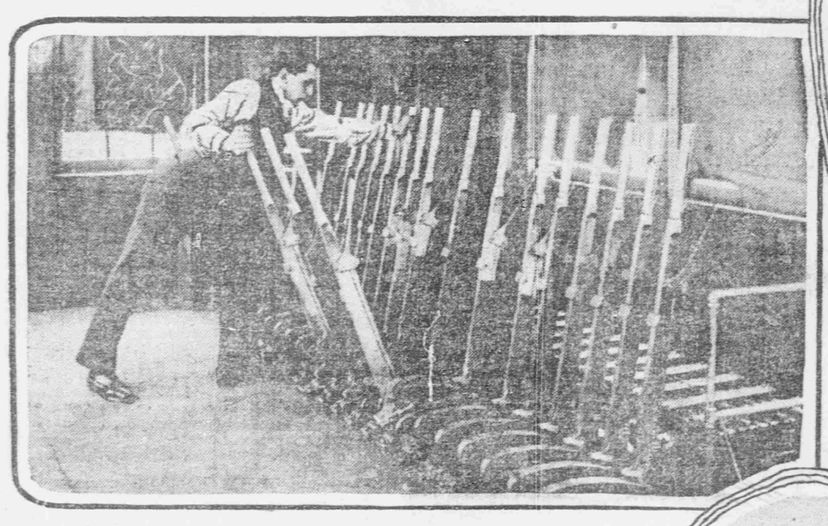
From the Naval Observatory on Georgetown Heights there is sent out each day a signal that registers the exact hour of noon for this meridian. By it all the clocks of the big telegraph companies and railways are regulated, and the various time-balls on high buildings fall when it is sounded. It serves to regulate the chronometers of the shipping along the Atlantic coast.

Working the "Time Ball."

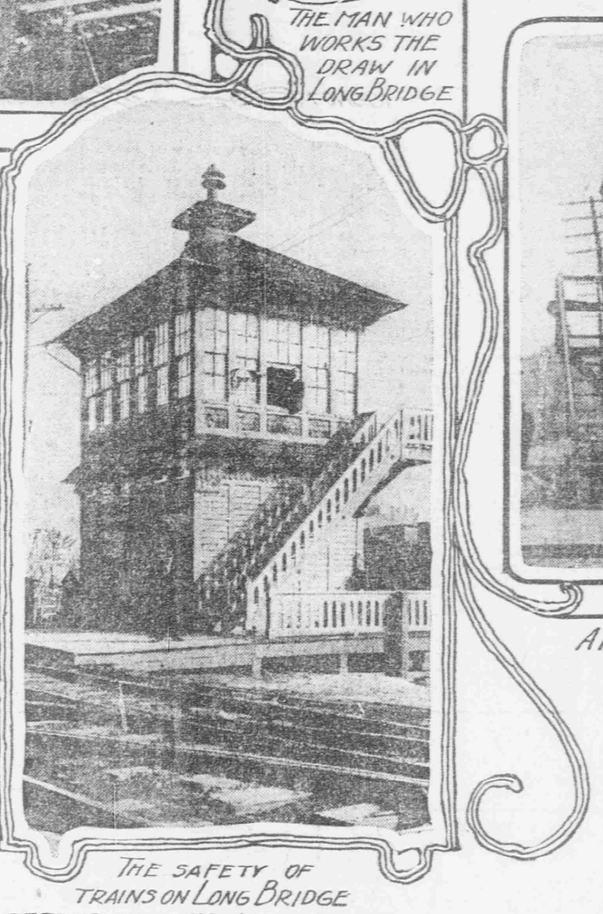
Should Lieutenant Commander Hayden, who is here in charge, make an error as the star crosses the face of the transit, or neglect to pay attention to the pulsings of the observatory clock—which beats every second up to 28, slipping 29, so as to give warning of the half second, and skips from 55 to 59, sounding one before the minute—grave things might happen. Here a slight error would be worse than a large one, for the slight error would probably pass undetected, while if the difference was wide, the skippers would declare their chronometers right and the observatory wrong.

The consequences following the departurs of a vessel with her chronometers wrong could easily be serious. Her reckonings would be upset, and, in these days of "steamship lanes" a vessel a few miles—comparatively speaking—out of her course would be in constant danger of collision. But in sending out the standard time, there is no such word as fail.

Men who count money are supposed to approach perfection. This aplies to women, too, for in the country's big money mill in Fourteenth Street, there are a number of young women engaged in counting the newly-printed bills for the last time before they are sent to the Treasury. They are compelled to work quickly, and must be accurate. Should a mistake be made, it is so much out of the pocket of the fair counter.

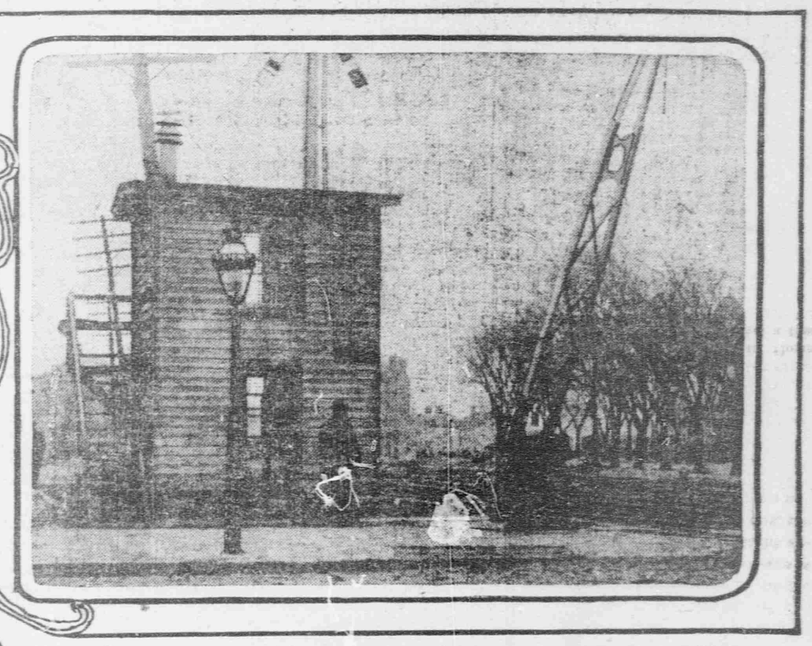


THE TOWER SWITCHMAN AT LONG BRIDGE



THE SAFETY OF TRAINS ON LONG BRIDGE DEPEND ON THIS LITTLE HOUSE

THE MAN WHO WORKS THE DRAW IN LONG BRIDGE



AN IMPORTANT CROSSING WHERE CONSTANT WATCH IS KEPT

In All Walks of Life Are Found Men Whose Slightest Error Would Bring Disastrous Results.

A WASHINGTON MAN IS TO HAVE A PICTURESQUE GERMAN GARDEN AT HIS HOME

WASHINGTON is soon to have as picturesque and quaint a bit of old Germany as can be found anywhere in the United States. This will be in the rear of the mansion of Christian Heurich of New Hampshire Avenue and N Street, and will be what in German is called a "form-obst garten," or, more properly, a "spalier-obst garten"—that is, a formal orchard, or trellis orchard.

The spalier-obst garten bears about the same relation to the ordinary fruit orchard that the formal—or Italian—garden does to the landscape garden, where nature is either followed or else imitated. In the German fashion, instead of the various fruit-bearing trees being allowed to grow in their natural manner, they are as carefully shaped and trained into certain forms and designs as are the yew tree and hedges of fragrant box that may still be found about the grounds of manors whose walls were erected in the days of old.

It is the design of Mr. Heurich to have on his place a typical German garden. All the trees planted therein, and they number several hundred, were imported especially from the old country. It would be next to impossible to find in America a man capable of taking charge of such a work, and so a gardener, Lochmann by name, was brought across the Atlantic to superintend the growth of the young trees in the tender days of their infancy.

The word trees has been used. They are indeed trees, so far as the term goes, yet they are trees that have been taught to relinquish their natural tendencies and grow after the manner of vines.

The obst-garten, or orchard, as seen today, presents a curious appearance. In it are rows of trellises, tall, slender stakes, reaching to a height of twelve or fifteen feet. In the center is an ornamental iron gateway, a beautiful specimen of the ironworker's skill, which was originally exhibited at the Paris Exposition of 1900. At either side run double rows of trellis work, with trees trained on the outer and inner sides.

The tender branches are so bent that a few inches from the ground they divide to the right and to the left, in the shape of the Greek letter Psi. The stem of the Psi thus formed continues upward for another six inches, when it divides like a capital letter U. This makes four branches, each following a rail of the trellis, and all growing upward as straight as the ramrod of Proverb.

The majority of trees planted along the trellises are made to grow in this fashion. At the ends of the wooden framework, however, there is an iron spiral frame in the shape of an oft-repeated letter S. The trees that are to be bent to follow the course of the iron have not yet been brought into shape. That will come in the spring and the early summer, when the sap is mounting freely, and the wood becomes soft and pliable.

All the trees in this garden were planted in the course of the fall, and since then have been the objects of constant attention. As soon as one is bent into shape it must be tied to the trellis for nearly a year until the wood has hardened in the unnatural shape it is made to assume.

And all the time the use of the pruning knife is required. Every bit of superfluous wood is cut away at once. The central sprouts alone are allowed to grow, and their course is directed steadily upward.

These fruit-bearing trees, which comprise all of the choicest varieties, are grafted on a dwarf species. This restrains the plant from running too much to wood. The judicious use of the pruning knife acts as a conserver of energy, and the result is that a variety of fruit which, on a tree, would be of a certain size, grows as large again on the artifically trained plant of the obst-garten.

Three years will be required before this garden reaches a state of maturity. But even then the gardener's work is not over. The trees have been shaped and formed. Now they must be made to retain that form. And, as before, every tendency to run to wood or needless off-shoots and branches has to be counteracted immediately.

Besides those trees growing along the trellis-work, there are others in open spaces being cut into odd devices or trained up on frames of twisted iron. Along the wall, where the sun of summer will beat down all day, have been set out apricots and peaches.

These have not yet been shaped, but their turn will come when the winter passes. A slender steel saw is used in cutting away under the branches that have to be bent, and the labor is one of great delicacy. A little carelessness might result in the death of a costly tree.

Besides the peaches and apricots, Mr. Heurich's garden boasts some fifty different kinds of apples and pears. Among the varieties there are the Herzogin Olga, the Kesseler reinette, the William Christbirne, the Amanlis Butterbirne, the Reinette Orleans, the Kaiser Wilhelm reinette, and the Anannas Lansberger.

Before the coming of summer walks will be laid out among the trellises of fruit trees. In front of the orchard there will also be a formal garden, of shrubs and flower bushes, also after the German fashion. This has not yet been laid out, both on account of the weather and the attention required by the young growing fruit trees.

In many German orchards it is the custom so to graft trees that two or more varieties of fruit may be picked from different branches of the same parent trunk. Flowers, especially roses, are also treated in this manner. The offshoots are clipped away, and the rose plant forced to grow as a tree. Then the grafting is performed, and the rose allowed to form a crown. The blossoms are thus kept in a solid mass, and the curious spectacle is witnessed of different roses blossoming together on the one plant.

This style of gardening is nothing if it is not scientific. The space of ground allowed to each plant, the quality of the soil, the amount of warmth in summer—are all carefully calculated, with a view to obtaining the best possible returns. Mr. Heurich's obst-garten occupies about half an acre—perhaps less. But when the plants have reached the bearing stage they will give fruit that, in quantity and quality, could not be equaled in many acres, if the trees were treated as is customary in this country.

Aside from this utilitarian point of view, much has been achieved that is of a distinct artistic value. The plants are so arranged that when in leaf they form a solid mass of green, interspersed with the delicate tints of blossoms or the glowing hues of ripening fruits, according to the season of the year.

Each tree has had made for it a porcelain plate, bearing its name in black letters. These plates are to be attached by means of wires, so that one walking in the garden will be able to know at once the variety of any particular fruit that may strike his fancy or arouse his admiration.